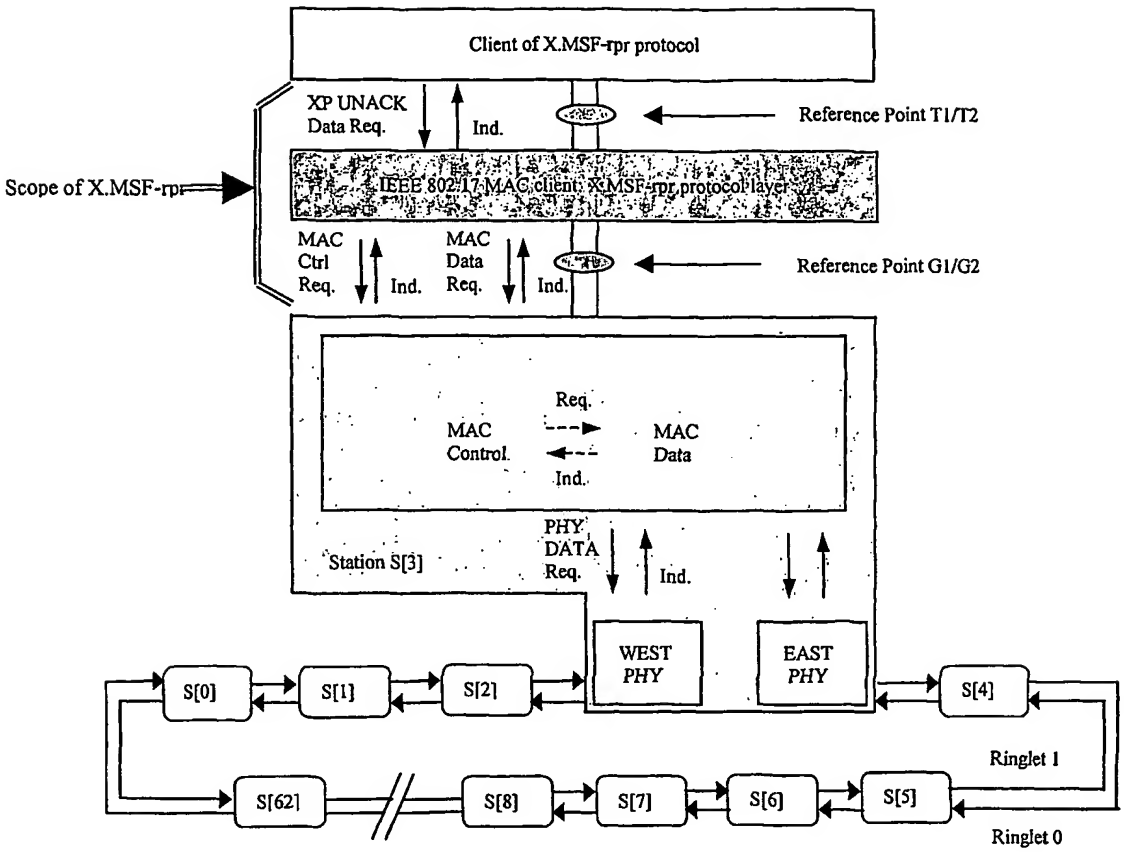

Fig. 1

The Scope of patent based on RPR as a MAC client

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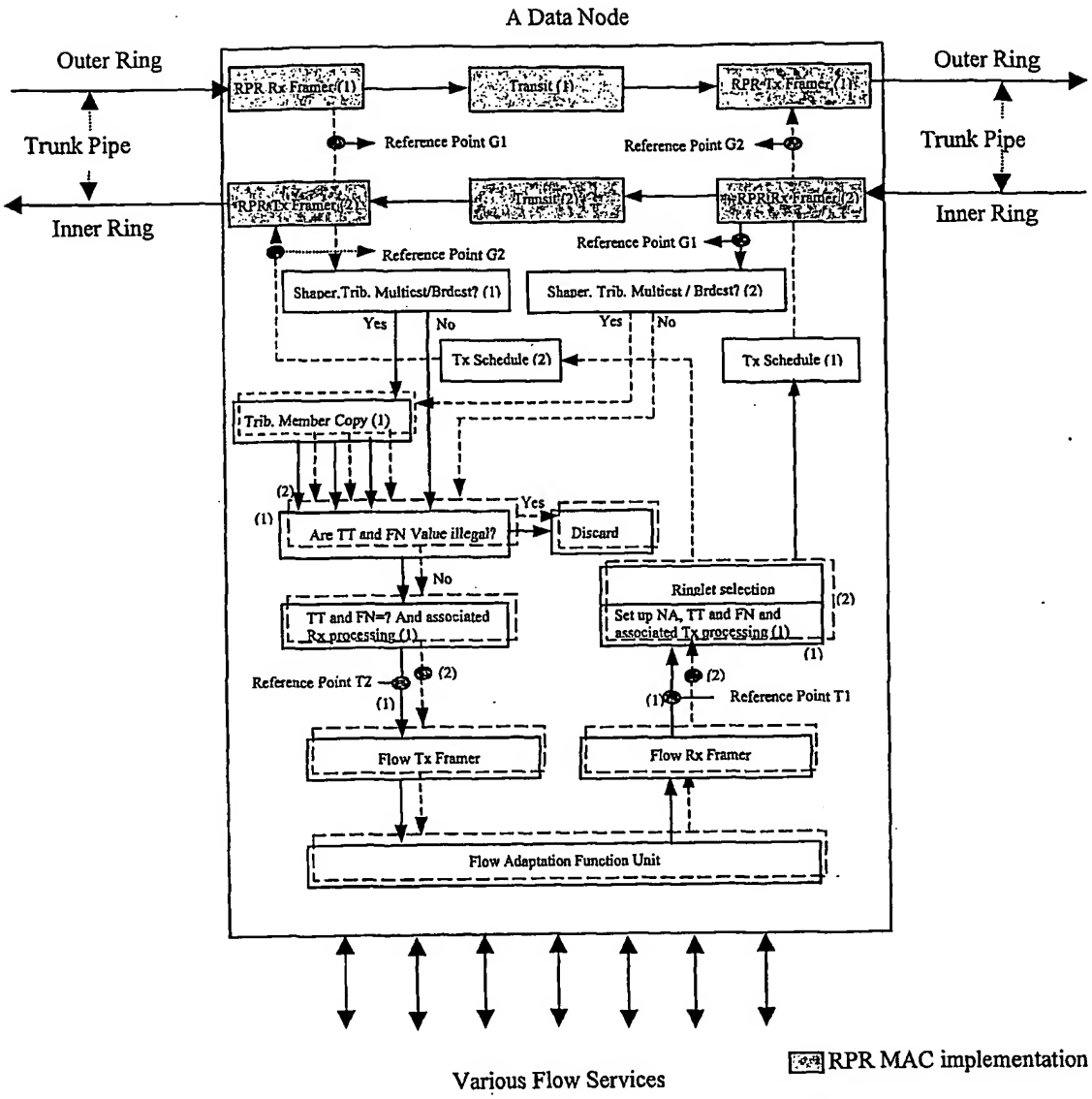


Fig. 2

Tx and Rx Diagram of a Data Node

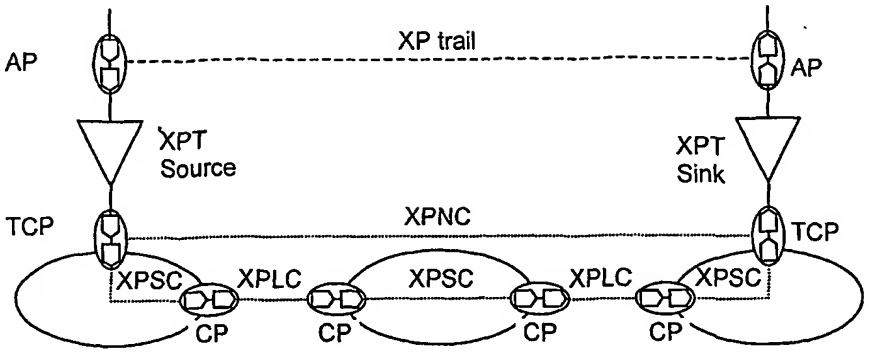


Fig. 3

XP layer network example

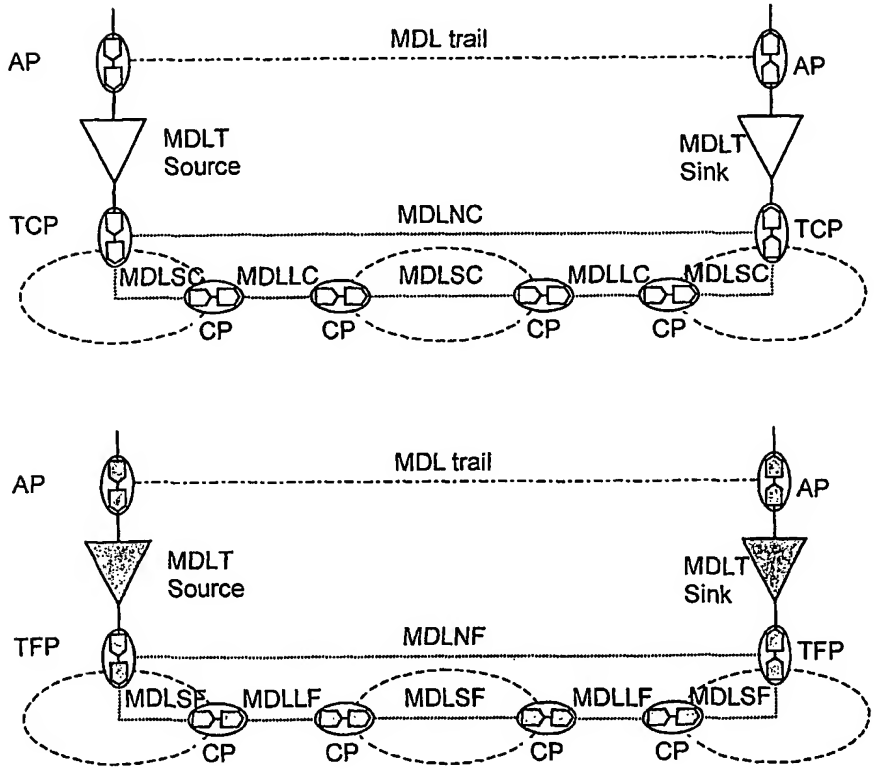


Fig. 4

MDL layer network example
Connection-oriented (upper) / connectionless (bottom)

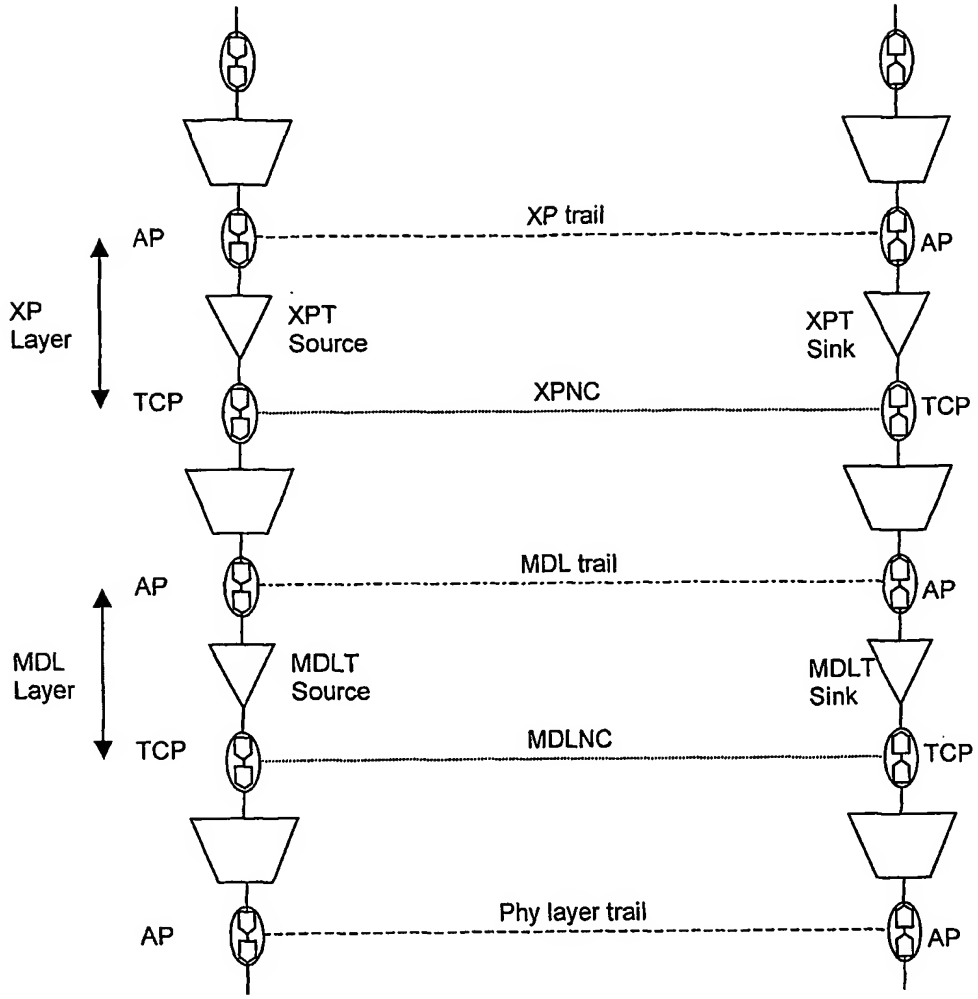


Fig. 5
Client/Server association in a MSF transport ring

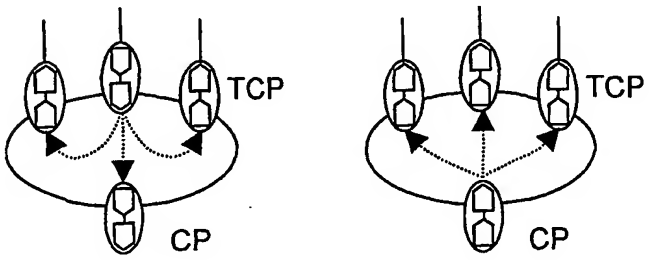


Fig. 6A
XP layer multipoint connection points examples

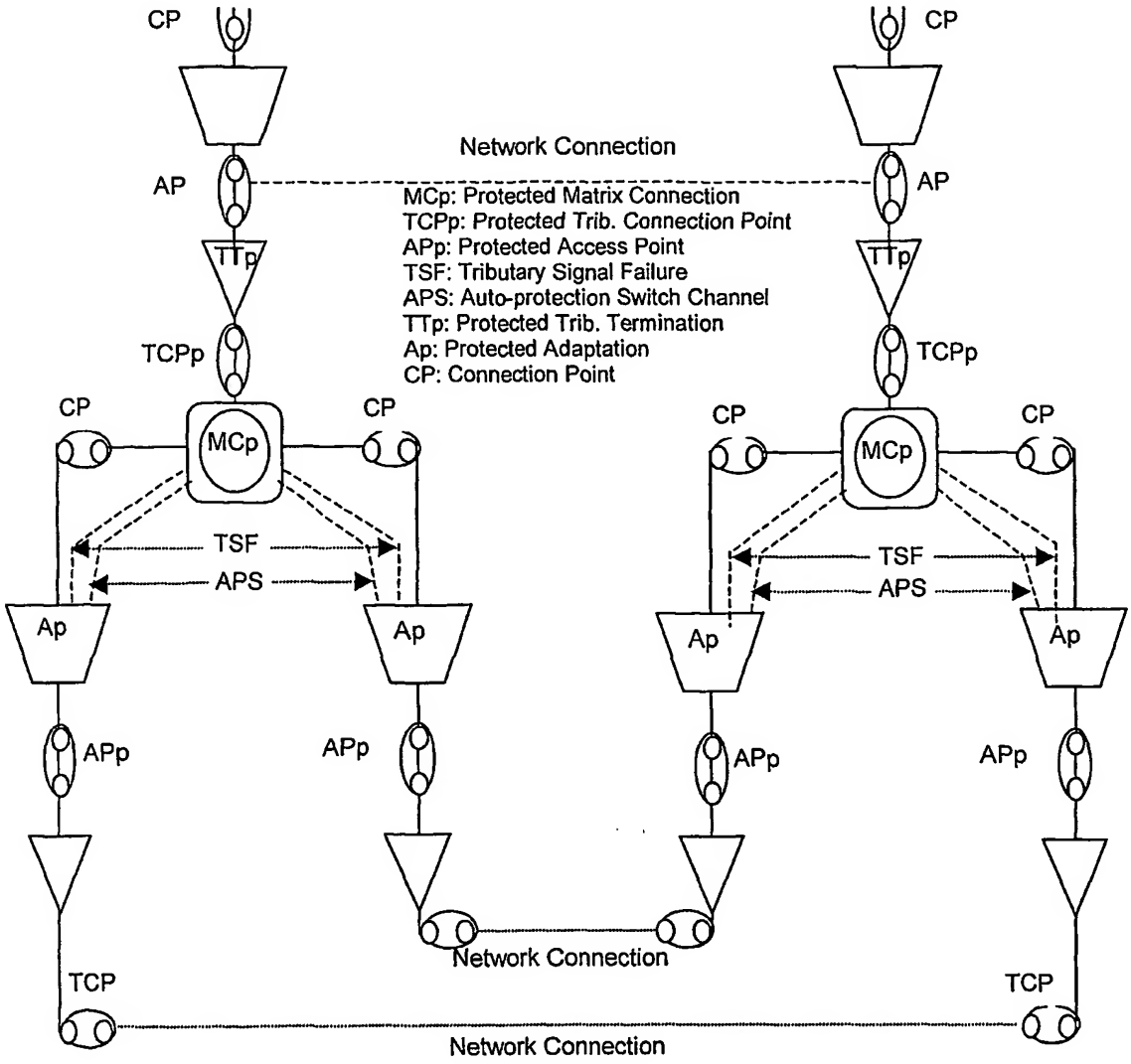


Fig. 6B
Flow Based 1+1 Protection

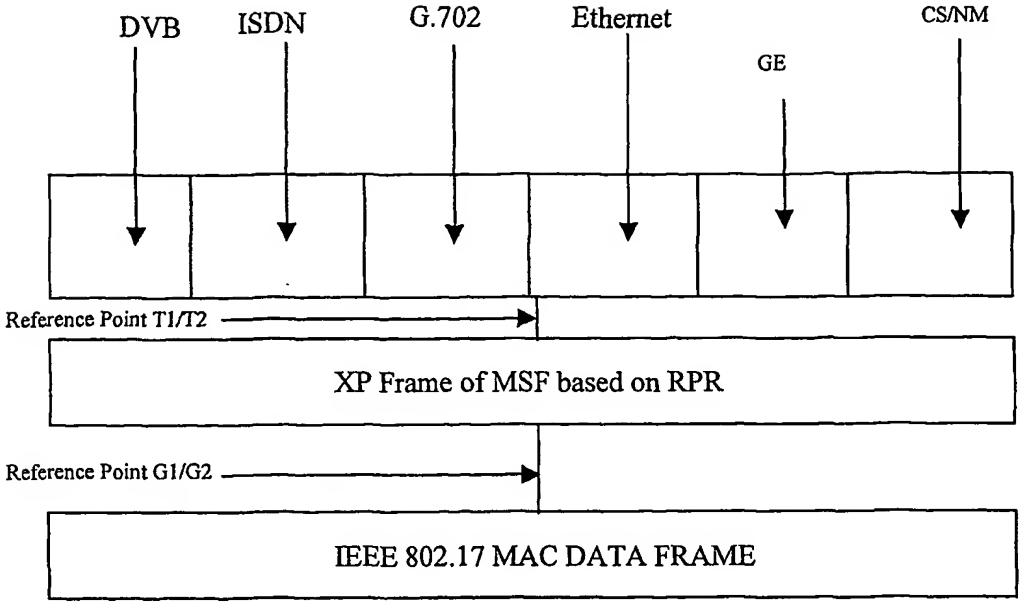


Fig. 7

Generic Protocol Stack of MSF Based on RPR

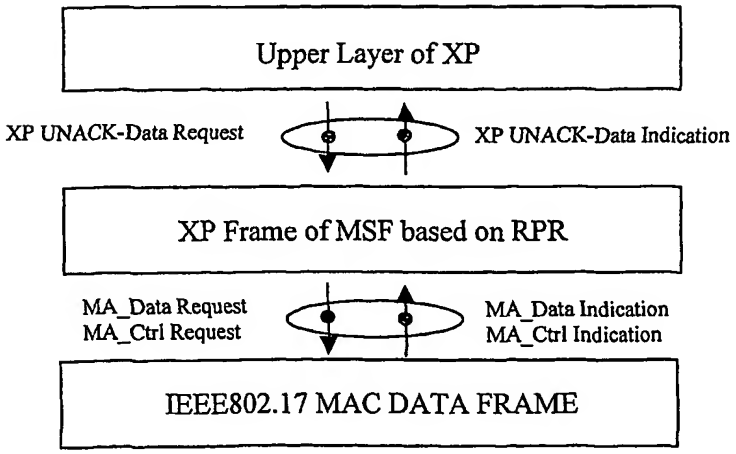
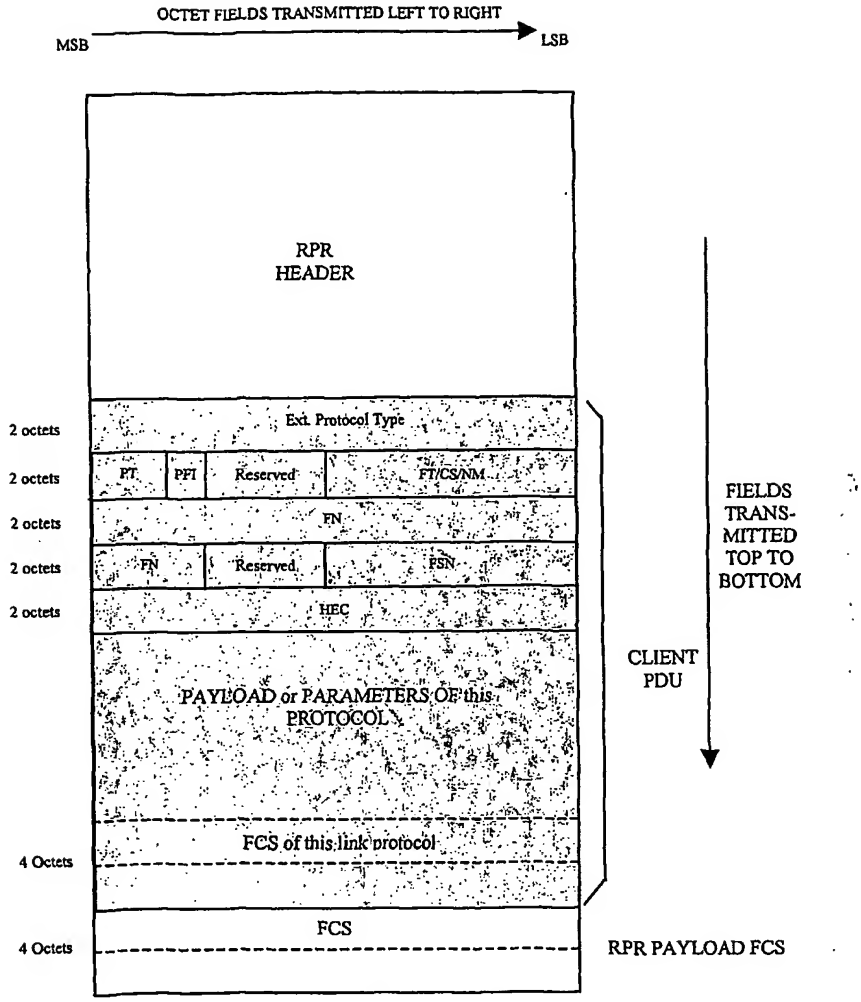


Fig. 8

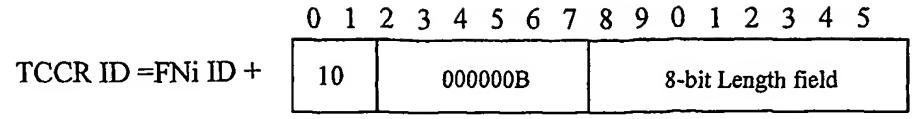
Relationship between XP and RPR MAC, Upper Layer and XP



Protocol type field is 0x88bc assigned by IEEE802.

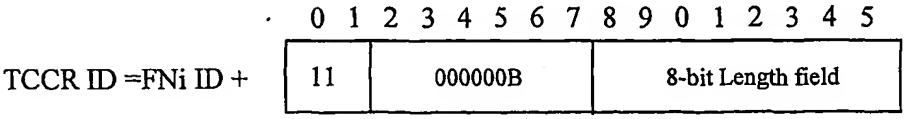
Fig. 9

Generic Frame Format

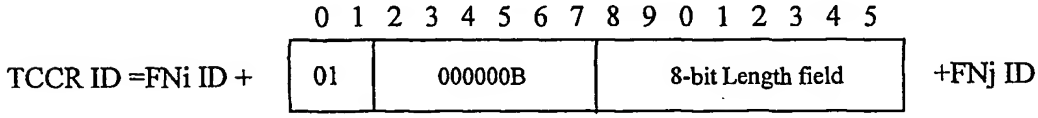


+FNj ID +FNk ID+FNm ID .....

Node based multicast Mode



Node based broadcast Mode



Node based unicast Mode

Fig. 10

Expressions of FN ID and TCCR ID

Note: FNi ID=NAx(x=1,2,3...256)+FT+FNp (p=0,1,2,3,...2^{20}-1), to identify the pth Flow with the fixed FT and FN value within ith node. For the case of Multicast/Broadcast Mode, a flow based outgoing packet within a source node can be multicast or broadcast to a designated or source flow (ST) of other sink nodes along a MSF ring or other topologies. Each sink node should have only a source flow to receive this packet from ringlet at a time. If a membership group of multicast or broadcast has been established within a sink node, the said ST will duplicate this packet to other flows with the same membership relation.

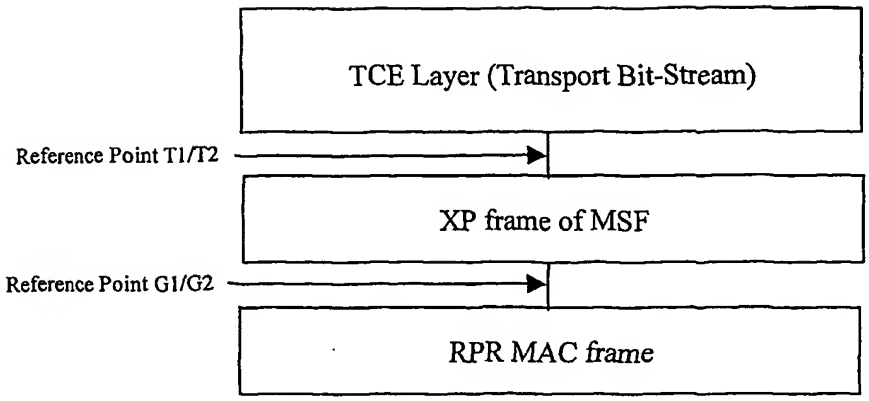
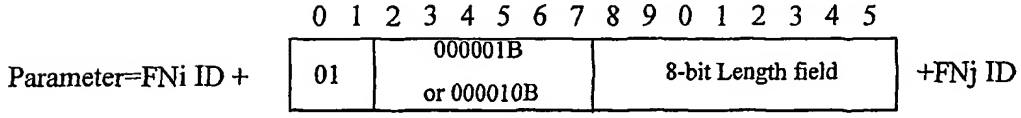


Fig. 11

TDM service channel over MSF

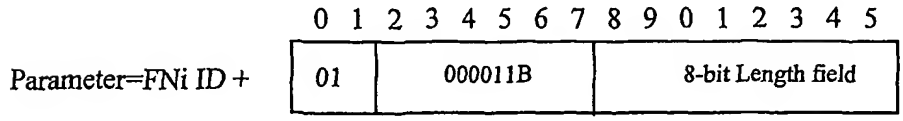


Full duplex point-to-point Mode

Note: FNi ID=NAx(x=1,2,3...256)+FT+FNp (p=0,1,2,3,...2^{20}-1), to identify the pth Flow with the fixed FT and FN value within xth node. FNi ID and FNj ID stand for standby and working flow respectively.

Fig. 12

Expressions of 1+1 and 1:1 flow protection parameters



+FNj ID +FNk ID + FNl ID + FNm ID.....

Full duplex point-to-point Mode

Note: FNi ID=NAx(x=1,2,3...256)+FT+FNp (p=0,1,2,3,...2^{20}-1), to identify the pth Flow with the fixed FT and FN value within xth node. FNi ID is used to present standby flow, and FNi ID, FNk ID, FNl ID and FNm ID etc represent working flow, the total number is N.

Fig. 13

Expressions of 1:N flow protection parameter

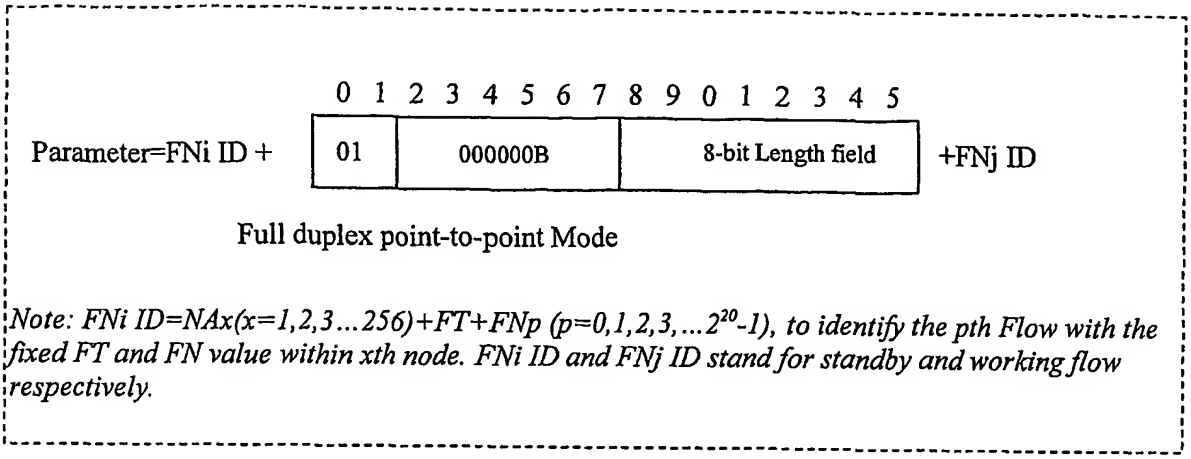


Fig. 14

Expressions of 1+1 and 1:1 flow protection parameters

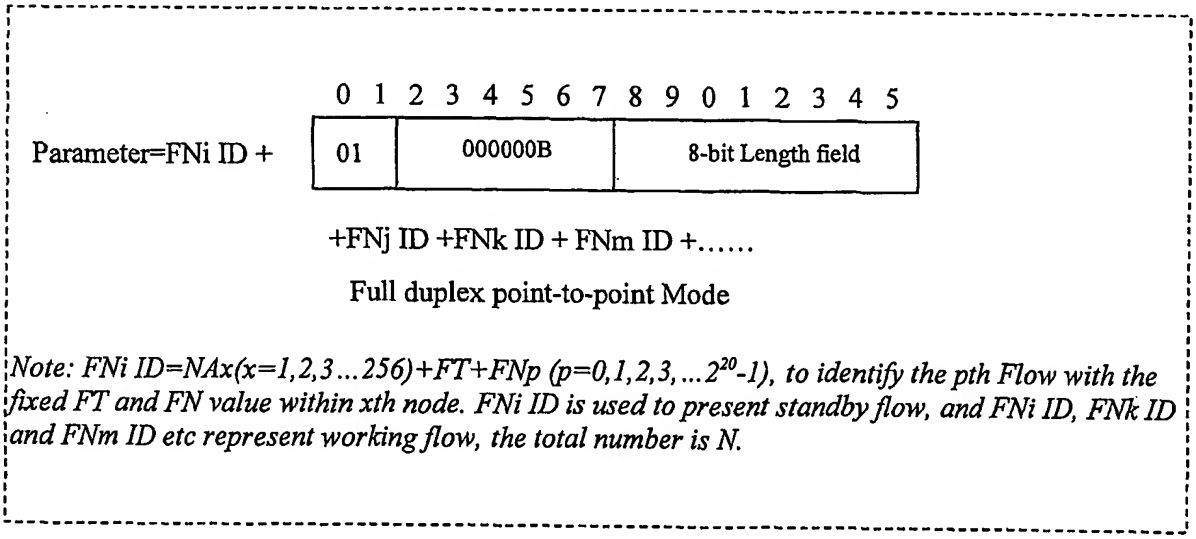


Fig. 15

Expressions of 1:N flow protection parameter

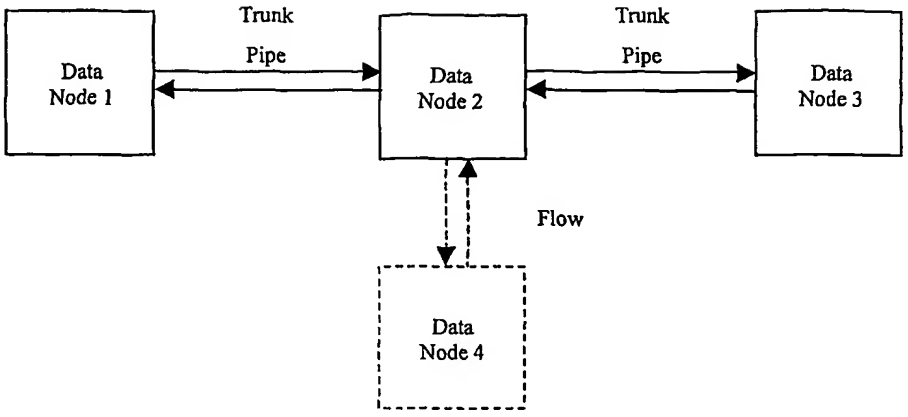


Fig. 16

A MSF Topology, Link-type with Adding and Dropping Flow Services

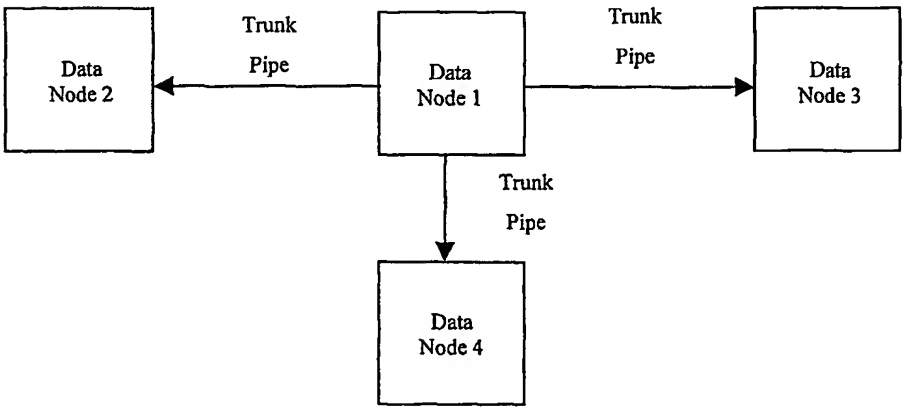


Fig. 17

A MSF Topology, Broadcast Connection to DVB Application

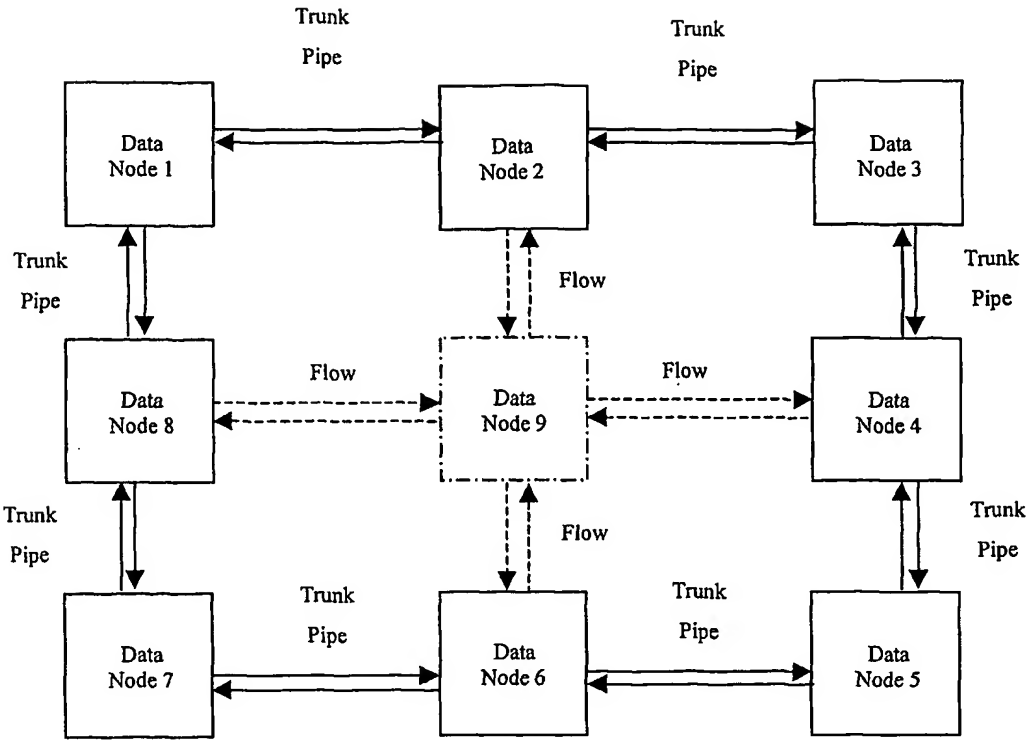


Fig. 18

A MSF Topology, Pseudo-mesh Connection

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